

REMARKS

Reconsideration of the above-identified application in view of the present amendment is respectfully requested.

By the present amendment, claim 1 has been amended to state that the phase stabilizer is an ammonium nitrate phase stabilizer and that the ammonium nitrate, phase stabilizer, and surfactant are soluble in the inert liquid. Claims 10 and 14 have been cancelled. Claims 15-20 have, also, been added to the application. Claim 15 includes limitations similar to the limitations of claims 1, 7, 8, and 9. Claims 16-20 include limitations similar to the limitations of claims 2-6.

With respect to item 1 of the Office Action, the prior inventors are William Sampson and Peter Astrauskas, which were listed as inventors in U.S. Patent Application Serial No. 09/767,017. William Sampson and Peter Astrauskas are not inventors of the present invention. Additionally, as discussed below, the subject matter of the present invention is not notoriously well known based on the prior art.

With respect to items 6 and 7 of the Office Action, please find enclosed a terminal disclaimer.

Below is a discussion of the 35 U.S.C. §103(a) rejection as it relates to claims 1-14 and newly added claim 15-20. Claims 1-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al.

Claim 1 recites a process for preparing a free-flowing, phase-stabilized ammonium nitrate. In the process, a solution

of ammonium nitrate, a surfactant, an inert liquid, and an ammonium nitrate phase stabilizer is prepared. The ammonium nitrate, the surfactant, and the phase stabilizer are soluble in the inert liquid. The solution is atomized to form a stream of droplets. The droplets are freeze-dried to form agglomerates of crystals of phase stabilized ammonium nitrate. The crystals of phase stabilized ammonium nitrate in the agglomerates are coated with a film comprising the surfactant. The agglomerates are disintegrated into separated free-flowing phase stabilized ammonium nitrate crystals coated with a film comprising the surfactant.

Claim 1 is patentable over Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. because: (1) Mehrotra et al., in view of Poole et al. '272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried; and (2) the Office Action fails to provide a motivation or suggestion to combine the prior art teachings to form a solution of a surfactant with ammonium nitrate and an ammonium nitrate phase stabilizer.

As noted in the Office Action, Mehrotra et al. teaches preparing a solution of ammonium nitrate and phase stabilizer in water, evaporating the water, and then grinding the crystallized ammonium nitrate to form a powder. Mehrotra et al. further teach that although evaporation of the water at a

moderate temperature is preferred, the water may be removed by freeze-drying.

The Office Action further notes that Mehrotra et al. do not teach the details of the freeze-drying process. Mehrotra et al. also do not teach adding a surfactant to the solution of ammonium nitrate and phase stabilizer as well as forming a stream of droplets of the solution prior to freeze-drying.

The Office Action first relies on Rogers et al., Olt, and Buhl et al. to teach the freeze drying process and that it would be obvious to use a surfactant with the ammonium nitrate and phase stabilizer solution taught in Mehrotra et al. Rogers et al., Olt, and Buhl et al., however, do not teach or suggest that a surfactant can be combined with a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Rogers et al. teach a method of making ultra-fine ammonium perchlorate particles. In the method taught in Rogers et al., an aqueous solution of ammonium perchlorate and a surface active agent is prepared, sprayed into a film of an organic liquid below the freezing point of the solution, and then freeze-dried. The surface-active agent is added to the ammonium perchlorate solution of Rogers et al. to control the crystal growth of the ammonium perchlorate during freezing. There is nothing in Rogers et al. that suggests adding a surfactant to a solution of ammonium nitrate and ammonium nitrate phase stabilizer. Moreover, there is nothing in Rogers et al. and Mehrotra et al. that suggests that the addition of a surfactant to a solution of ammonium nitrate and

an ammonium nitrate phase stabilizer that is freeze dried will control crystal growth and that it is even desirable to decrease the crystal growth of ammonium nitrate and an ammonium nitrate phase stabilizer during freezing.

Olt, likewise, teaches a process of preparing ultra-fine ammonium perchlorate. In the process, a surface-active agent is added to a solution of aqueous ammonium perchlorate and an organic liquid when the organic liquid "does not have emulsifying properties". (Column 2, lines 63-68).

Olt does not teach using a solution of ammonium nitrate and an ammonium nitrate phase stabilizer or forming an emulsion using an ammonium nitrate and an ammonium nitrate phase stabilizer. The solution of ammonium nitrate and ammonium nitrate phase stabilizer taught in Mehrotra et al. does not include ammonium perchlorate or an organic liquid and is not an emulsion. Thus, there is no motivation or suggestion, based on Olt, to add a surfactant to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze dried because neither Mehrotra et al. or Olt disclose or suggest that a surface active agent be included with a solution of ammonium nitrate and ammonium nitrate phase stabilizer and the solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze dried does not include an organic liquid and is not an emulsion.

Buhl et al. teach a method of preparing reagent spheres for biological assays. The reagent spheres are formed from a solution of a reagent, a surfactant, and a filler that is freeze dried. The surfactant is used to control bubble

formation when the reagent sphere is used in biological assays, and the filler is used to facilitate the formation of a chemical lattice capable of conducting water to the reagent sphere.

Buhl et al. do not teach adding a surfactant (or a filler, which has properties of a surfactant) to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer. Moreover, there is no motivation or suggestion in Buhl et al. to add a surfactant or filler to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is being freeze dried. The surfactant in Buhl et al. is used to control bubble formation in a biological assay.

There is no suggestion in Buhl et al. and Mehrotra et al. that ammonium nitrate can be used in a biological assay or that bubble formation is a problem associated when forming molded propellants made using freeze dried ammonium nitrate. Thus, there is no motivation or suggestion based on Buhl et al. to add a surfactant to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze dried.

Thus, the Office Action fails to provide a motivation or suggestion to add a surfactant to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze-dried.

The Office Action also argues that Scheffee et al. teach a gas generating composition that includes an oxidizer and a binder, which may include PVP, that Olt and Rogers et al. teach that binders can be included in the freeze-drying

process, and that substitution of the binder in Olt and Roger et al. would have been obvious.

Mehrotra et al. in view of Rogers et al., Olt and Scheffee et al. do not teach or suggest adding a binder to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze-dried and specifically do not teach adding polyvinylpyrrolidone to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze-dried.

Rogers et al. teach the binder is a carboxyl terminated or hydroxyl terminated liquid hydrocarbon (Column 3, lines 7-11), while Olt teaches that the binder is a carboxyl terminated or hydroxyl terminated polybutadiene (Column 3, lines 48-54). Polyvinylpyrrolidone has the chemical formula $(C_6H_9NO)_n$ and therefore is not a binder as taught in Rogers et al. and Olt. Thus it would not be obvious to substitute the binder taught in Scheffee et al. for the binders taught in Rogers et al. and Olt.

Additionally, there is no suggestion in the prior art to add a binder to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze-dried. Mehrotra et al. neither discloses nor suggests that a binder can be added to a solution of ammonium nitrate and ammonium nitrate phase stabilizer that is freeze-dried. Rogers et al., Olt, and Scheffee et al. do not teach or suggest a solution of ammonium nitrate and ammonium nitrate phase stabilizer. Thus, there is no motivation in Mehrotra et al., Rogers et al., Olt and Scheffee et al. to add a binder to a solution of ammonium nitrate and ammonium nitrate phase stabilizer.

Thus, the prior art cited in the Office Action neither discloses or suggests all the limitations of claim 1. Accordingly, withdrawal of the rejection of claim 1 is respectfully requested.

Claim 2 depends from claim 1 and further recites that the inert liquid is water.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Therefore claim 2 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 2.

Claim 3 depends from claim 2 and further recites that the surfactant is a polyvinyl pyrrolidone.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, as discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding polyvinylpyrrolidone to a solution of ammonium nitrate and phase stabilize ammonium nitrate that is freeze-dried.

Therefore, claim 3 is allowable for the same reasons as claim 1 and for the specific limitations recited in claim 3.

Claim 4 depends from claim 1 and further recites that the phase stabilized ammonium nitrate crystals have an average diameter of about 1 μ m to about 20 μ m.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Therefore, claim 4 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 4.

Claim 5 depends from claim 1 and further recites that the amount of surfactant in the solution is from about 0.01% to about 0.15% based upon the combined weight of the ammonium nitrate and the surfactant.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Therefore, claim 5 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 5.

Claim 6 depends from claim 1 and further recites that the phase stabilizer comprises potassium nitrate.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, Mehrotra et al. in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., Buhl et al. and Scheffee et al. do not disclose or suggest that the phase stabilizer is potassium nitrate. In the process of Mehrotra et al., potassium fluoride is taught as the phase stabilizer. There is no suggestion in Mehrotra et al. that potassium nitrate can be used in the process of Mehrotra et al., specifically where the process includes the step of freeze-drying. Therefore, claim 6 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 6.

Claim 7 depends from claim 1 and further recites that the freeze-drying step comprises cooling the stream of droplets to a temperature below the freezing point of the solution of ammonium nitrate, inert liquid, surfactant, and phase stabilizer, and sublimating the frozen droplets to remove the inert liquid from the frozen droplets and form the phase stabilized ammonium nitrate.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a

solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Therefore, claim 7 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 7.

Claim 8 depends from claim 7 and further recites that the cooling step is performed by contacting the stream of droplets with a cooling means maintained at temperature below about -130°C.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Therefore, claim 8 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 8.

Claim 9 depends from claim 8 and further recites that the cooling means is a drum with an outer surface temperature of below about -130°C.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of

Buhl et al. and Scheffee et al. do not disclose or suggest that the cooling means is a drum with outer surface with a temperature below about -130°C . Olt, Rogers et al., and Buhl et al., all teach using a liquid coolant to freeze the solutions. None of these references disclose or suggest that the cooling means is the surface of a drum. Therefore, claim 9 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 9.

Claim 11 recites a process for preparing phase-stabilized ammonium nitrate. In the process, an aqueous solution of ammonium nitrate, a surfactant, and potassium nitrate are prepared. The aqueous solution is atomized to form a stream of droplets. The stream of droplets is cooled to a temperature below the freezing point of the solution. The frozen droplets are sublimated to remove the water from the frozen droplets to form agglomerates of crystals of phase stabilized ammonium nitrate. The crystals of phase stabilized ammonium nitrate in the agglomerates are coated with a film of surfactant. The agglomerates are disintegrated into separated free-flowing phase stabilized ammonium nitrate crystals coated with a film comprising the surfactant.

Claim 11 includes limitations similar to claims 1, 2, 6 and 7. As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Moreover, as discussed above

with respect to claim 6, Mehrotra et al. in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., Buhl et al. and Scheffee et al. do not disclose or suggest that the phase stabilizer is potassium nitrate. Therefore, claim 11 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 11.

Claim 12 depends from claim 11 and further recites that the phase stabilized ammonium nitrate crystals have an average diameter of about 1 μ m to about 20 μ m.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Moreover, as discussed above with respect to claim 6, Mehrotra et al. in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., Buhl et al. and Scheffee et al. do not disclose or suggest that the phase stabilizer is potassium nitrate. Therefore, claim 12 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 12.

Claim 13 depends from claim 11 and further recites that the amount of surfactant in the solution is from about 0.01% to about 0.15% based upon the combined weight of the ammonium nitrate and the surfactant.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee

et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried. Moreover, as discussed above with respect to claim 6, Mehrotra et al. in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., Buhl et al. and Scheffee et al. do not disclose or suggest that the phase stabilizer is potassium nitrate. Therefore, claim 13 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 13.

Claim 15 recites a process for preparing a free-flowing, phase-stabilized ammonium nitrate. In the process, a solution of ammonium nitrate, a surfactant, an inert liquid, and an ammonium nitrate phase stabilizer is prepared. The ammonium nitrate, the surfactant, and the phase stabilizer are soluble in the inert liquid. The solution is atomized to form a stream of droplets. The stream of droplets is frozen by contacting the stream of droplets with a surface of a drum. The surface is maintained at temperature below the freezing point of the solution. The frozen droplets are sublimated to remove the inert liquid from the frozen droplets and form agglomerates of the phase stabilized ammonium nitrate. The agglomerates are disintegrated into separated free-flowing phase stabilized ammonium nitrate crystals coated with a film comprising the surfactant.

Claim 15 contains limitations similar to claims 1 and 9. As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do

not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, as discussed above with respect to claim 9, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest that the droplet are cooled by contacting the droplets with the surface of a drum maintained at a temperature below the freezing point of the solution. Olt, Rogers et al., and Buhl et al., all teach using a liquid coolant to freeze the respective solutions taught in these references. None of these references disclose or suggest that the respective are contacted with the surface of a drum have a temperature below the freezing point of the solutions. Therefore, claim 15 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 15.

Claim 16 depends from claim 15 and further recites that the inert liquid is water.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, as discussed above with respect to claim 15, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al.

and Scheffee et al. do not disclose or suggest that the droplet are cooled by contacting the droplets with the surface of a drum maintained at a temperature below the freezing point of the solution. Therefore, claim 16 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 16.

Claim 17 depends from claim 15 and further recites that the surfactant is a polyvinyl pyrrolidone.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, as discussed above with respect to claim 15, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest that the droplet are cooled by contacting the droplets with the surface of a drum maintained at a temperature below the freezing point of the solution. Therefore, claim 17 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 17.

Claim 18 depends from claim 15 and further recites that the phase stabilized ammonium nitrate crystals have an average diameter of about 1 μ m to about 20 μ m.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt,

Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, as discussed above with respect to claim 15, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest that the droplet are cooled by contacting the droplets with the surface of a drum maintained at a temperature below the freezing point of the solution. Therefore, claim 18 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 18.

Claim 19 depends from claim 15 and further recites that the amount of surfactant in the solution is from about 0.01% to about 0.15% based upon the combined weight of the ammonium nitrate and the surfactant.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, as discussed above with respect to claim 15, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest that the droplet are cooled by contacting the droplets with the surface

of a drum maintained at a temperature below the freezing point of the solution. Therefore, claim 19 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 19.

Claim 20 depends from claim 15 and further recites that the phase stabilizer comprises potassium nitrate.

As discussed above with respect to claim 1, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest adding a surfactant to a solution of ammonium nitrate and an ammonium nitrate phase stabilizer that is freeze-dried.

Moreover, as discussed above with respect to claim 15, Mehrotra et al., in view of Poole et al. 272, Burns et al. '329, Olt, Rogers et al., and further in view of Buhl et al. and Scheffee et al. do not disclose or suggest that the droplet are cooled by contacting the droplets with the surface of a drum maintained at a temperature below the freezing point of the solution. Therefore, claim 20 should be allowable for the same reasons as claim 1 and for the specific limitations recited in claim 20.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the above-identified application is respectfully requested.

Attached hereto is a marked-up version of the changes made by the present amendment. The attached page is captioned **"AMENDED CLAIMS WITH MARKINGS."**

Serial No. 09/767,567

Please charge any deficiencies or credit any overpayment
in the fees for this amendment to our Deposit Account
No. 20-0090.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Richard A. Sutkus', written over a horizontal line.

Richard A. Sutkus
Reg. No. 43,941

TAROLLI, SUNDHEIM, COVELL,
TUMMINO & SZABO L.L.P.
1111 Leader Building
526 Superior Avenue
Cleveland, Ohio 44114-1400
Phone: (216) 621-2234
Fax: (216) 621-4072

AMENDED CLAIMS WITH MARKINGS

Claim 1 has been amended as follows:

1. (Amended) A process for preparing a free-flowing, phase-stabilized ammonium nitrate, said process comprising the following steps:

preparing a solution of ammonium nitrate, a surfactant, ~~a an ammonium nitrate phase stabilizer, and an~~ inert liquid, and an ammonium nitrate phase stabilizer, said ammonium nitrate, said surfactant, and said phase stabilizer being soluble in said inert liquid;

atomizing the solution to form a stream of droplets;

freeze-drying the droplets to form agglomerates of crystals of phase stabilized ammonium nitrate, the crystals of phase stabilized ammonium nitrate in the agglomerates being coated with a film comprising the surfactant; and

disintegrating the agglomerates into separated free-flowing phase stabilized ammonium nitrate crystals coated with a film comprising a surfactant.

Claims 10 and 14 were cancelled.